

BOOK REVIEWS

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Manual of Nearctic Diptera, Volume 2.—J. F. McAlpine (ed.) 1987. Research Branch Agriculture Canada Monograph 28, Minister of Supply and Services, Quebec. Pages 675-1332. \$68.35 U.S.

The companion volume to the first part of *Manual of Nearctic Diptera* (McAlpine et al., 1981) is here. It covers, in a chapter devoted to each, 64 families, from the primitive ("Aschiza") Muscomorpha all the way to the Pupipara, and in a manner equally superb to volume one. There is also in the volume three and one-half pages of corrections and addenda to volume one. Given the amount of detail in each volume, were some minor mistakes not made, it would be a great surprise. The upcoming volume three will contain the last three chapters, on phylogenies of the Nematocera, orthorrhaphous Brachycera, and the Muscomorpha, as well as a composite index for both volumes.

As in volume one the amount of wonderful illustrations is astounding: to my count, 1,817 drawings in volume two! They are primarily of habitus, head, wing, and terminalia, and were done in the same style throughout the entire manual (at least 3,000 drawings total) because all but several dozen illustrations were done by one person, Ralph Idema. Some of the drawings were used in taxonomic papers published by the Ottawa group ever since 1965, which is around the time Mr. Idema began work there, and when inspiration for the *Manual* had already jelled. The achievements of this artist are a model as to what all revisionary taxonomists wish to produce, and the drawings will be a lasting contribution to Diptera taxonomy for their detail and clarity, as well as style. Students should find the *Manual* as a reference for technique in pen and ink and in composition. Some notes to inspired illustrators: the outlines add depth because the line thickness was varied using a crow quill pen (this was also done for setae, and it takes considerable practice to master), the beautifully-graded stippling was done using a rapidograph with a point finer than that used for some outlines, and the "halo" around overlapping lines, such as at the edge of a seta, was produced by scratching away the surface of the drawing film. Despite a lesson in technique several years ago, I have yet to achieve Idema's effect in rendering the eyes. Mr. Idema: for the sake of insect taxonomists, please draw a small handbook on illustration techniques.

Most of the chapters were written by the current and active taxonomist on the family, and as a result, references up to 1986 are included in some chapters. However, just how recent is the literature review varies considerably with the chapter.

The accounts of each family, 107 in all, include sections on the adult, immature stages (where known), biology and behavior (such as breeding sites, many records of which were previously unpublished), and a section on classification and distribution under which there are usually comments regarding the known fossils. The chapters on the larger families which have not been comprehensively treated in a single work are a major taxonomic contribution of the *Manual*. Previously, keying Tipulidae, Empididae, Dolichopodidae, Mycetophilidae, Lauxaniidae, Chloropidae, and many Muscoidea to genus was a nightmare for the non-specialist. The only negative comment of mine concerns the very long and detailed descriptions of each tagma of the

adult at the beginning of each chapter, which should have been shortened into a more diagnostic format.

Because much material remains yet unprepared and unstudied from most amber deposits, comments on fossils are anecdotal. All the major amber deposits—the Lower Cretaceous of Lebanon (Schlee and Dietrich, 1970), Lower Miocene—Upper Oligocene of Chiapas, Mexico and the Dominican Republic (Hurd et al., 1962; Baroni-Urbani and Saunders, 1982), and the Upper Cretaceous of Canada (McAlpine and Martin, 1969)—are more unworked than studied. For example, in the Dominican amber collection at the AMNH are specimens representing very interesting records of Anisopodidae, several genera of Phoridae, Micropezidae, Clusiidae, Odiniidae (*Odinia*), Anthomyzidae, Aulacigastridae (3 genera), Asteiidae (*Asteia*), Milichiidae (various genera), Lanxaniidae, Chloropidae (3 genera), Drosophilidae (Grimaldi, 1987), and the first records of at least Ephydriidae (*Beckeriella*), among many other families. Meunier described a great deal of Baltic amber Diptera, as did Hennig later on, but unlike the latter, Meunier had a great propensity for proposing new genera simply on paleontological grounds. Many Meunier taxa will need to be re-examined before those names will be phylogenetically meaningful.

A few nomenclatural proposals and changes are buried in the text. The genera *Neossos* and *Paraneossos*, formerly placed in the Trixoscelididae, have been put into the Heleomyzidae. As had been discussed, there is good evidence for probably synonymizing the trixoscelidids with the Heleomyzidae, but the remaining genera are left in the Trixoscelididae as is best for a work of this type. I spotted two new taxa: *Acantholespesia* for the Tachinidae (for which couplet 47' is the diagnosis), and the subfamily Epiplateinae for the Richardiidae, (containing *Automola*, *Epiplatea*, and the unusual genus *Omomyia*). At least for the latter instance, it would be preferable to have new names for higher taxa proposed in the context of a major revisionary paper. I believe that it will soon be published that *Sphyracephala brevicornis* (Say) isn't the only North American dropsid: *S. subbifasciata* Fitch is sympatric with, but distinct in color pattern and male genitalia from, *S. brevicornis*. The two species were synonymized for over 80 years.

Contributions from one prominent North American dipterist for the Manual are entirely absent save for at least the repeated reference to a large study of his (Griffiths, 1972). One might surmise by reading just the critiques of the Manual (Griffiths, 1981) that volume one was about 400 pages worth of male terminalia homologies, and of the interordinal homology of the "paramere" and epandrium in particular. Any lack of cooperation between these Canadian parties is unfortunate for Griffiths' knowledge of particular North American taxa could have been used for valuable contributions in the Manual. McAlpine agrees with some of the hypotheses proposed in the 1972 study by Griffiths, such as the sister-group relationship of the Chryomyidae and the Sphaeroceridae. But there is not always agreement between the two; for example, despite evidence which corroborates Griffiths' hypothesis that at least *Campicheota* should be separated into a family in the Drosophiloidea (Chandler, 1987), it is kept in the Diastatidae by McAlpine. Differences are summarized best in the classifications presented in Griffiths (1972) and in the beginning of volume one of the Manual. The Manual adheres to a conservative classification, such as use of the paraphyletic Nematocera, orthorrhaphous Brachycera, and Aschiza Muscomorpha, which I suppose were used mostly for convenience at the time. Use of Griffiths' (1972) highly

hierarchical, genealogical classification was perhaps seen to be too cumbersome for a reference book like the Manual, as well as probably incorrect in places, but that classification is used in the "Flies of the Nearctic Region" (which Griffiths edits). The two works, hardly mutually exclusive, are fascinating in their dichotomy: the meticulous and comprehensive treatment of the Manual, and the very original and synthetic, in places cavalier, treatment of Griffiths (1972). The two works serve different uses: that of the Manual's first two volumes is almost entirely for identification and is not revisionary, so it should prove interesting to see how the results of volume three mesh with Griffiths' 1972 book.

Basically the Manual is a technical masterpiece. Volumes one and two are not a truly scholarly work, but are as encyclopedic as is possible for a work of this size. Regardless of the type of entomologist that you are, this book is a must.—*David Grimaldi, Entomology Department, American Museum of Natural History, New York, New York 10024.*

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MAKING THE GRADE: A CLASSIFICATION OF SOME NORTH AMERICAN CARABIDAE

Cladistic Analysis of North American Platynini and Revision of the *Agonum extensicolle* Group (Colleoptera: Carabidae).—James K. Liebherr, 1986 University of California Publications in Entomology (Volume 106). x + 198 pp. \$16.95 (paper).

This work is a systematic revision of a group of North American ground beetles belonging to the tribe Platynini. The contents are divided into sections that are more or less standard for a modern systematic revision. Initial sections provide introductory background information, a cladistic analysis of selected North American platynine species, and keys to the genera of this tribe and to the species of *Agonum* in